The supply/demand balance in NC: are we within our water budget?

The short answer: we have no water budget, so we do not know. Projecting and preparing for future water demands is critical to North Carolina's overall well-being. As noted by the Water 2030 study, conducted in 2004, a growing population will increase industrial, residential, and energy needs, thus increasing overall water usage. "The population is expected to grow from 8.5 million in 2004 to 12 million in 2030. Water consumption is expected to increase from 241 billion gallons per year for all households to 335 billion gallons if consumption continues on its current path." As a result, the Water 2030 study called for funding to address new supply infrastructure, education, and policy issues.

The Water 2030 study originally intended to estimate the overall water supply, but was ultimately unable to do so. The best method for assessing the state's supply/demand balance—in other words, whether the state is and is going to be using water within the water budget available to it—is through the hydrologic models of each river basin that are now under construction by the Division of Water Resources (DWR) within the Department of Environment and Natural Resources (DENR). Many factors, including climate change, land use changes, the lack of groundwater change data, and the varying quality of the Local Water Supply Plan data used as inputs to these models, make them imperfect, but they remain the best available scientific predictors of the times and places where water shortages will occur in North Carolina in future decades.

The United States Geological Survey (USGS) water usage survey offers a different perspective on projected demand from that of Water 2030. The USGS study states, "The early part of this history (1950 to 1980) showed a steady increase in water use. During this time, the expectation

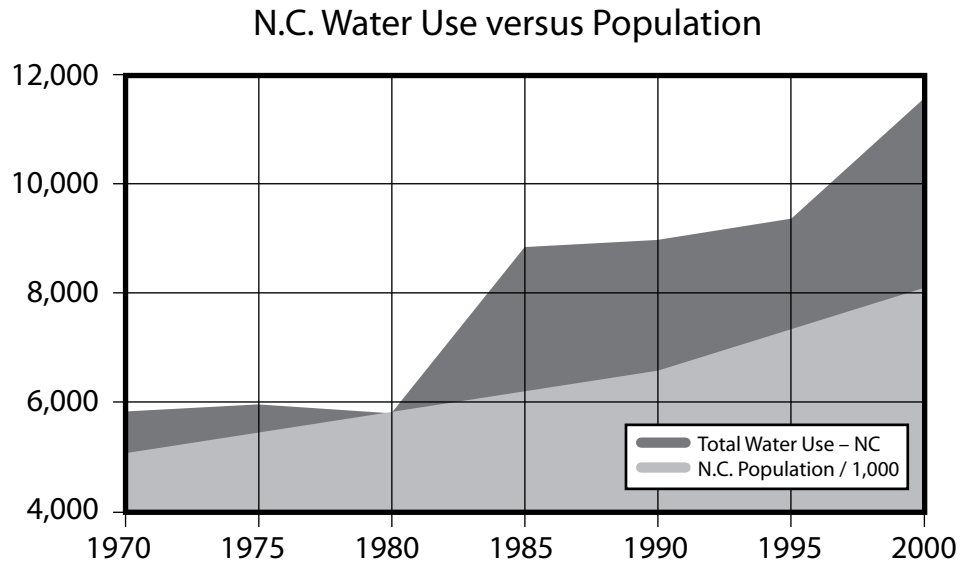

FIGURE 1. North Carolina's historical water use, in mgd, plotted against population growth (divided by 1,000 to scale to water use in mgd). Water use data from USGS; population data from NC State Demographics Office.